

We claim:

1. An apparatus for percutaneously accessing the intrapericardial space, comprising:

an outer elongated tubular body having a closed distal end, an aperture in a sidewall adjacent the closed end, and a proximal portion for applying a vacuum thereto,

an inner elongated tubular body having a distal end sealingly extending into said outer tubular body from a proximal end external to said outer body, creating a first passage between said outer and inner tubular bodies,

a piercing body disposed in a distal portion of said outer tubular body adjacent said aperture, said piercing body having a sharp distal end and a lumen extending therethrough from a proximal end thereof to a sidewall opening therein adjacent such sharp distal end, the proximal end of said piercing body being connected to the distal end of said inner tubular body, thereby creating a conduit leading from externally of said outer tubular body to said piercing body sidewall opening, said piercing body being longitudinally moveable in said outer tubular body to an extent permitting the distal end thereof to traverse said aperture and appose said piercing body sidewall opening and said aperture, and passage means laterally adjacent said piercing body permitting flow communication from said aperture to said first passage regardless of the longitudinal location of said piercing body in said distal portion of said outer tubular body.

2. The apparatus of claim 1 further comprising limiter means arranged in said distal portion of outer tubular body proximately of said aperture for limiting longitudinal movement of said piercing body in said outer tubular body toward and away from said closed distal end of the outer tubular body.

3. The apparatus of claim 1 in which at least said distal end of said outer tubular body is radio-opaque.

4. The apparatus of claim 1 further comprising an electroconductive terminal adjacent said aperture and a terminal lead electroconductively communicating said terminal exteriorly of outer tubular body remotely from said distal end of said outer tubular body.

5. The apparatus of claim 1 in which said distal portion of said outer tubular body is axially fixed and wherein said distal end thereof further comprises a stabilizer portion for preventing axial rotation of said distal portion.
6. The apparatus of claim 5 in which said stabilizer portion has a width to height aspect exceeding unity.
7. The apparatus of claim 6 wherein said stabilizer portion comprises a frontally ramped nose.
8. The apparatus of claim 7 wherein said stabilizer portion has an underside including a longitudinal concavity.
9. The apparatus of claim 7 wherein said stabilizer portion includes longitudinal grooves along the upper side thereof.
10. The apparatus of claim 1 further comprising a filament extending into said conduit from exteriorly of said outer tubular body.
11. The apparatus for percutaneously accessing the intrapericardial space, comprising:
- an elongate outer tubular body having a closed distal end and a passage extending through said body from an aperture in the sidewall of the body adjacent said distal end thereof and including a proximal portion for applying a vacuum,
 - a needle having a sharp leading end, a trailing end and a lumen therethrough from said trailing end to a side opening in the needle adjacent said leading end, said needle being arranged in said tubular body to allow flow communication in said passage from said aperture toward said proximal opening under influence of an applied vacuum and being longitudinally moveable in said passage for said sharp end to traverse said aperture and appose said needle side opening and said aperture without occluding flow communication in said passage, and
 - a filament received in said needle lumen and exiting said tubular body at a proximal portion thereof.
12. The apparatus of claim 11 further comprising a inner tubular body received in said outer tubular body without occluding flow communication in said passage, said inner tubular body being connected distally to said trailing end of said needle and

sealingly exiting said outer tubular body at a proximal portion of said outer tubular body.

13. The apparatus of claim 11 further comprising limiter means arranged in said distal portion of said outer tubular body distally of said proximal opening and

5 proximately of said distal aperture for limiting longitudinal movement of said needle in said passage toward and way from said closed distal end.

14. The apparatus of claim 11 wherein said distal end of said outer tubular body distal of said closure comprises a frontally ramped stabilizer portion having a width to height aspect exceeding unity.

10 15. The apparatus of claim 14 wherein said stabilizer portion as an underside including a longitudinal concavity.

16. The apparatus of claim 15 wherein said stabilizer portion includes longitudinal grooves along the upper side thereof.

17. The apparatus of claim 11 in which at least said distal end is radio-opaque.

15 18. The apparatus of claim 11 further comprising an electroconductive terminal adjacent said aperture of said outer tubular body and a terminal lead electroconductively communicating exteriorly of said tubular body remote from said distal end thereof.

19. An apparatus for percutaneously accessing the intrapericardial space,
20 comprising:

an elongated outer tubular body having a closed distal end, an aperture in a sidewall adjacent the closed end, a proximal inlet and a proximal branch for applying a vacuum thereto,

25 a seal in said proximal inlet for sealing said outer tubular body to maintain an applied vacuum in said outer tubular body,

a needle carrier arranged and moveable longitudinally in a distal portion of said outer tubular body without occluding flow communication from said aperture toward said branch under influence of an applied vacuum,

30 limiter means in said outer tubular body distally of said branch and proximately of said closure for limiting distal and proximal longitudinal travel of said needle carrier,

a needle having a lumen and carried in said needle carrier, said needle having a sharp leading end extending distally from said carrier and a trailing

end extending proximally from said carrier, and having a lateral opening adjacent said sharp leading end alignable with said aperture of said outer tubular body,

5 a inner tubular body receive in said outer tubular body without occluding fluid flow therein under influence of an applied vacuum and connected distally to said trailing end of said needle to provide a conduit including said lumen, said inner tubular body sealingly exiting said outer tubular body proximally through said seal, and

a filament received in said conduit.

10 20. The apparatus of claim 19 in which said limiter means comprise at least one constriction in said distal portion of said outer tubular body adjacent at least one end of and narrower than said needle carrier.

21. The apparatus of claim 19 in which said carrier includes a longitudinal recess having a distal end and a proximal end, at least one of which is blind, and wherein said 15 limiter means comprise a stop extending transversely from said distal portion of said outer tubular body into said groove for impingement by said blind end or ends of said groove.

22. The apparatus of claim 21 in which said limiter means further comprise a 20 constriction in said distal portion of said outer tubular body distal to and narrower than said needle carrier.

Claims 23 – 73 (canceled)